

ABSTRACT OF THE DISCLOSURE

A gas laser oscillator of easy maintenance which is capable of switching a beam mode at high speed. Electric discharge sections in which gas medium is flown are formed in an optical resonating space in an electric discharge tube between a rear mirror and an output mirror. Electrodes are connected to electric discharge power sources (alternative current or direct current power sources). Coils are wound around the electric discharge tube at the respective electric discharge sections and excited by coil excitation circuits. Directions and intensities of the excitation currents from the coil excitation circuits are controlled by a controller. Regions in which the electric discharge currents flow between the electrodes in the respective electric discharge sections are varied by magnetic fields generated by the coils in accordance with the directions and intensities of the excitation currents of the coils, to thereby control the beam mode.